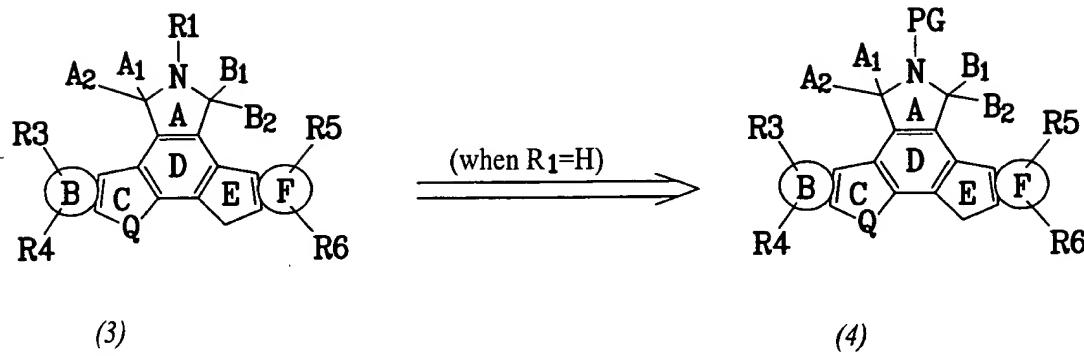




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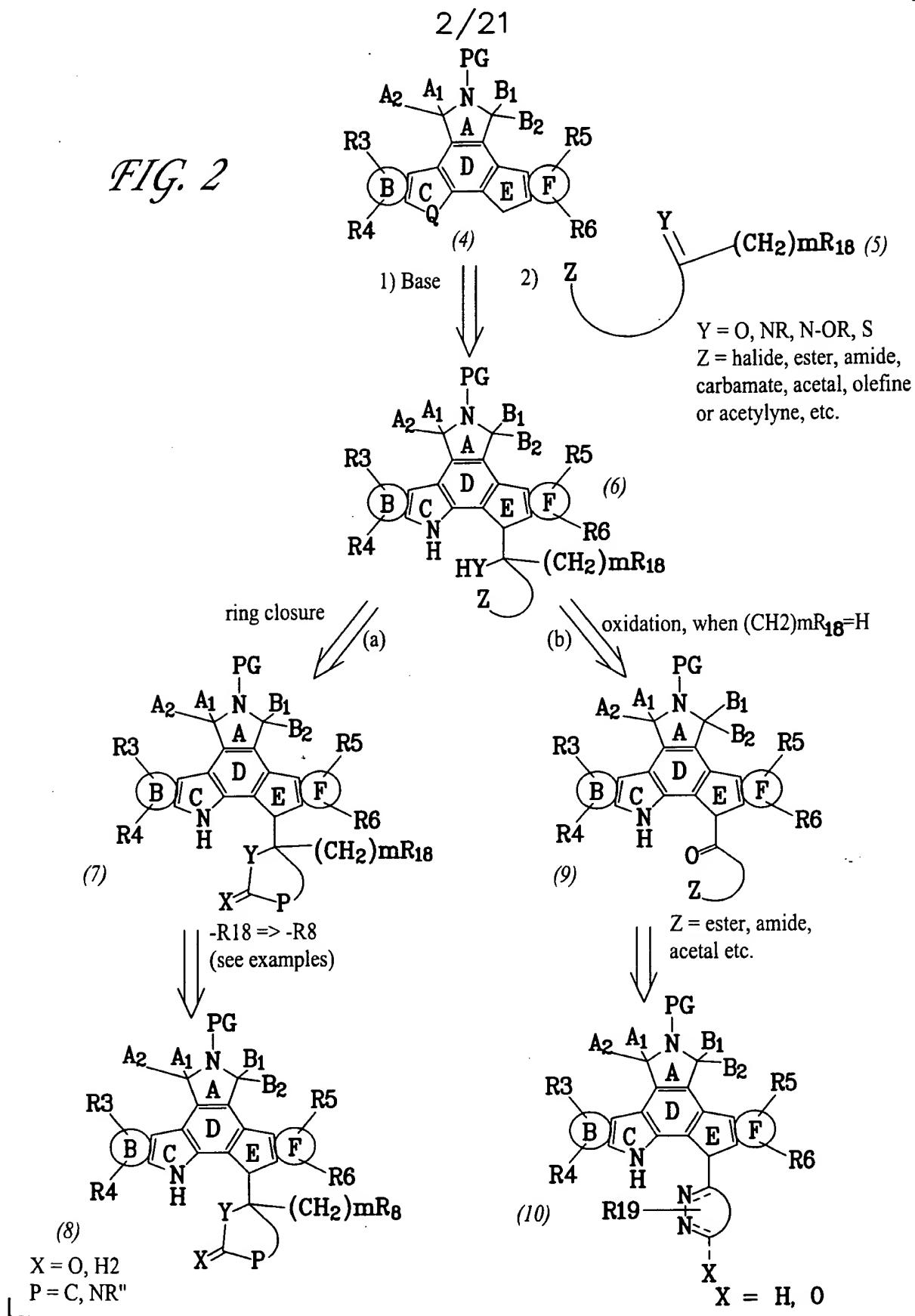
FIG. 1



PG = Protecting Group
or
Polymeric Support

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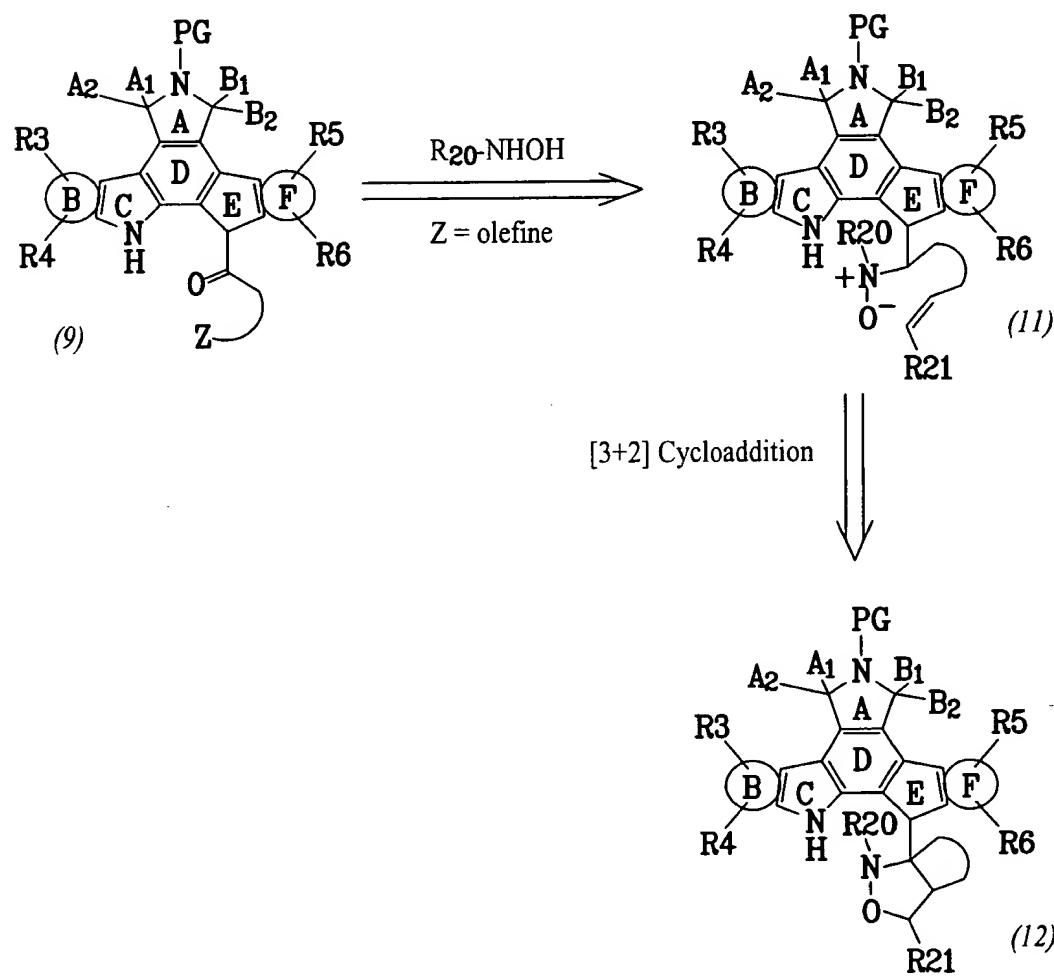
FIG. 2



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FIG. 3

Preparation of Cyclic Substituents via Intra-Molecular Dipolar Cycloaddition

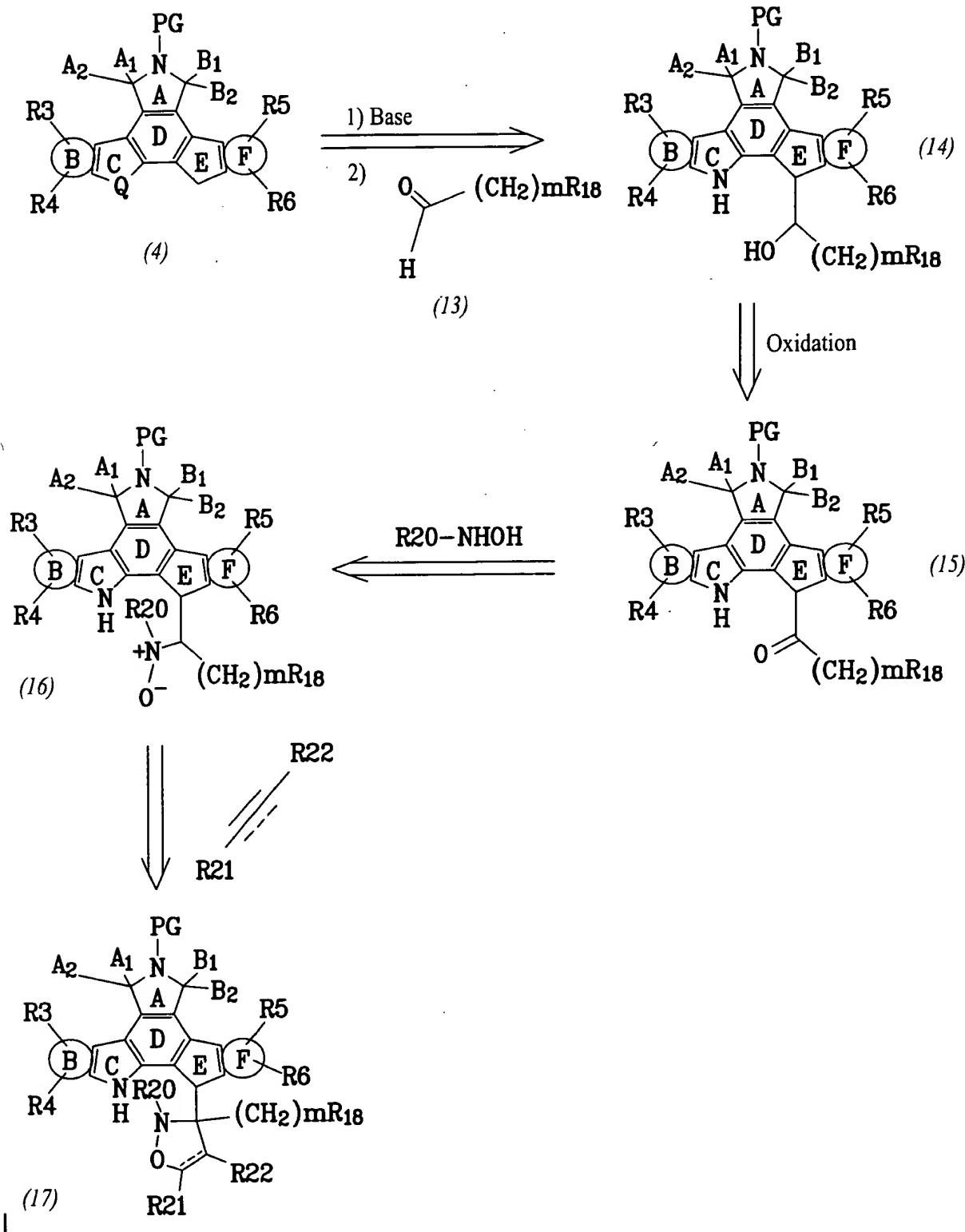




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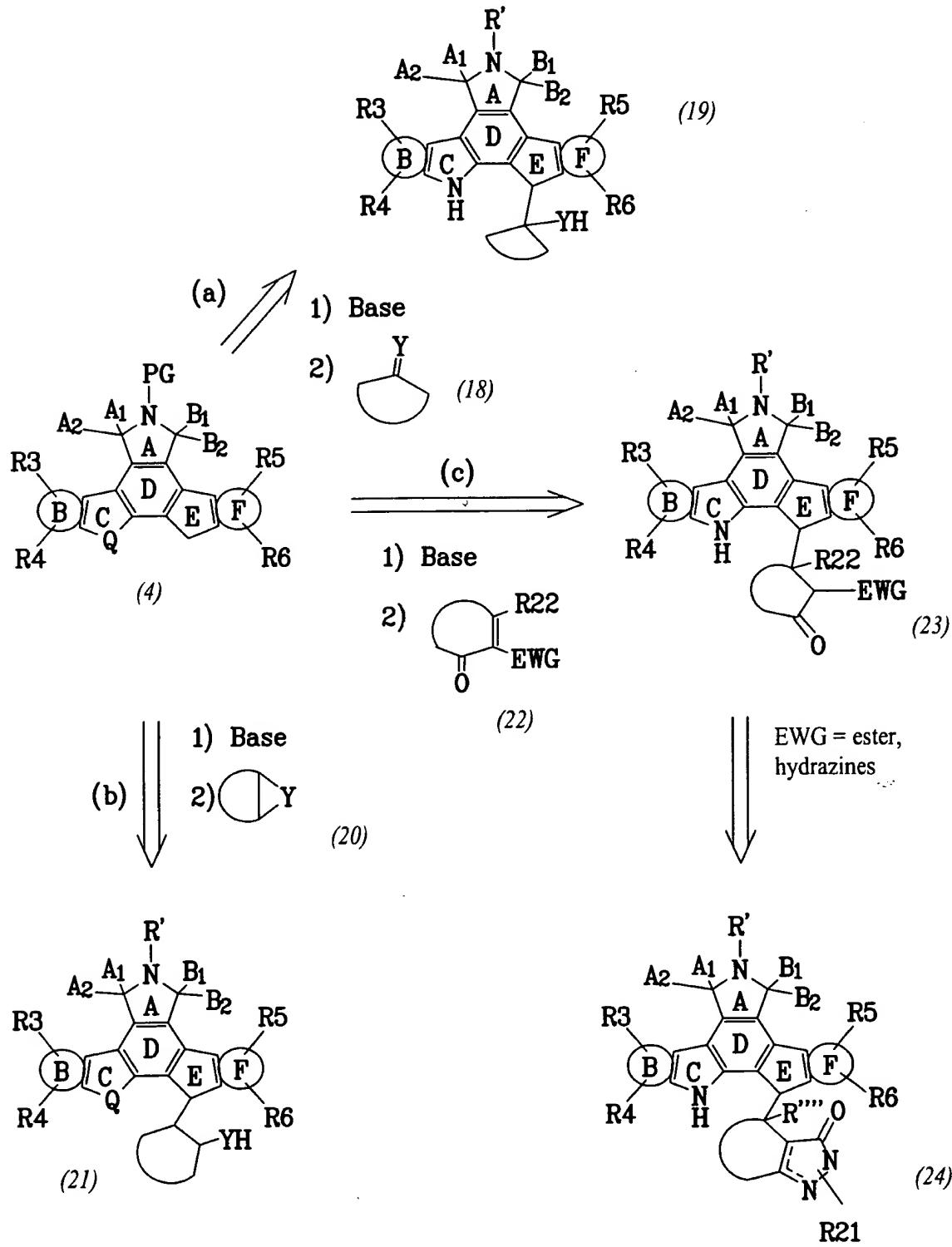
FIG. 4

Preparation of Cyclic Substituents via Intra-Molecular Dipolar Cycloaddition



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FIG. 5

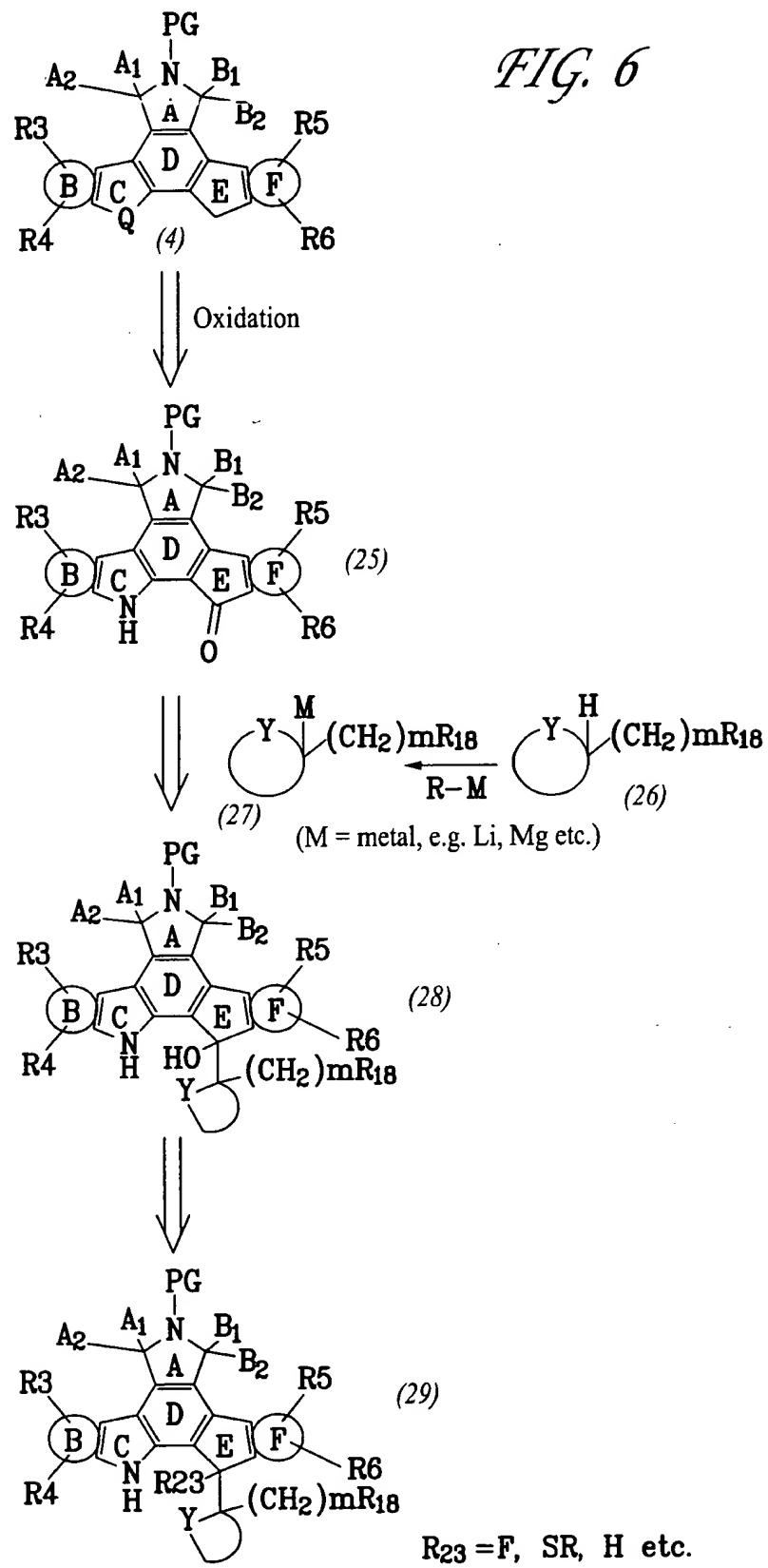




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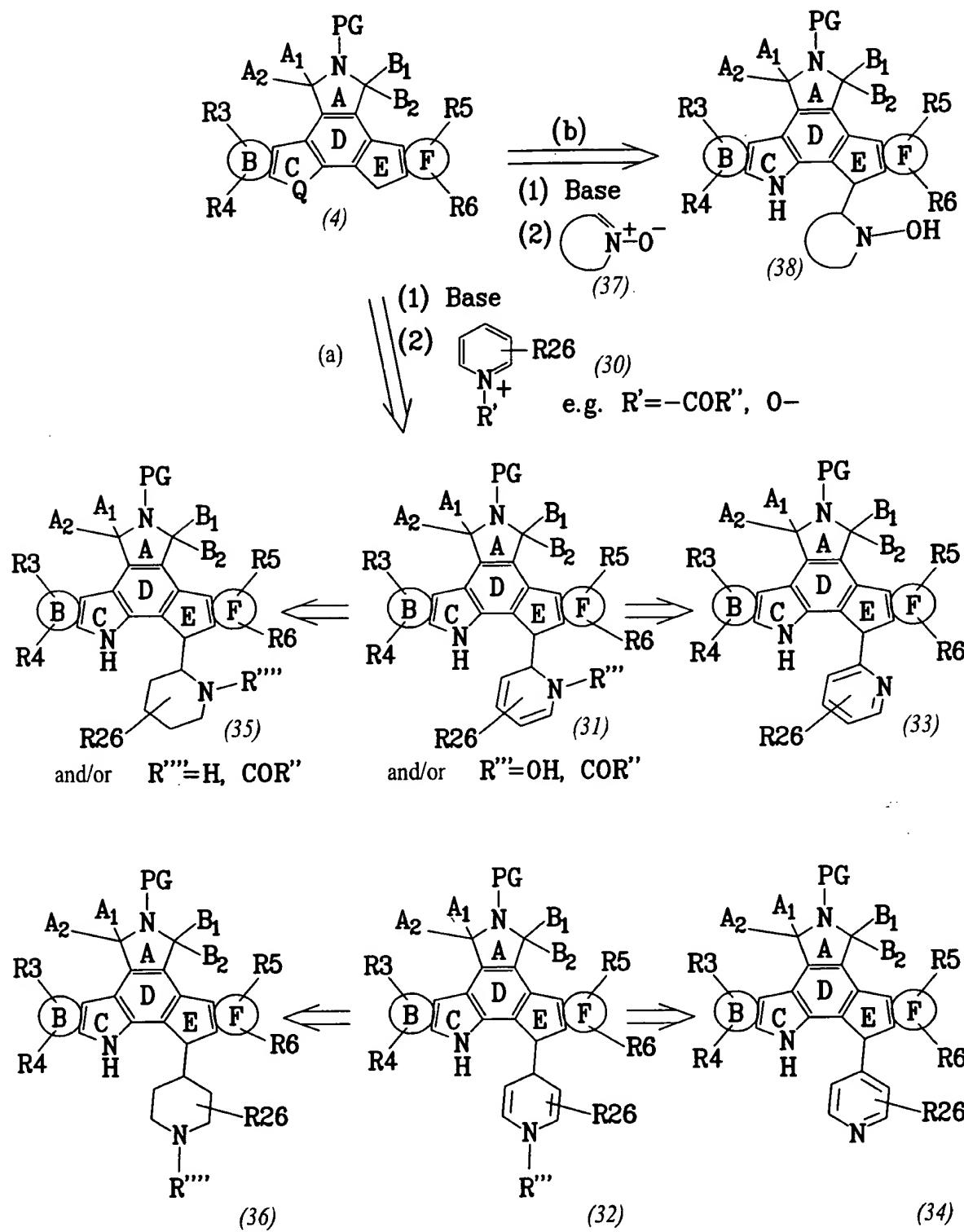
FIG. 6





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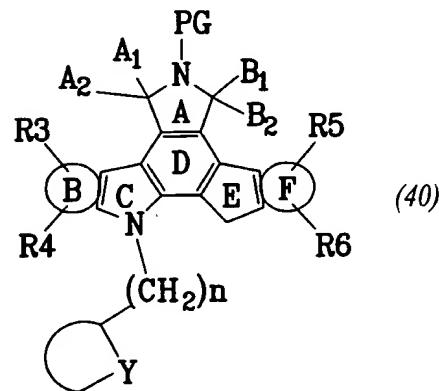
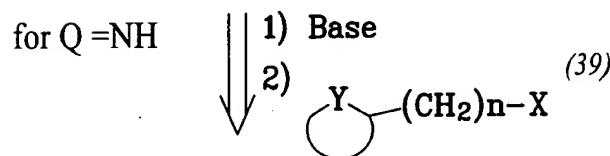
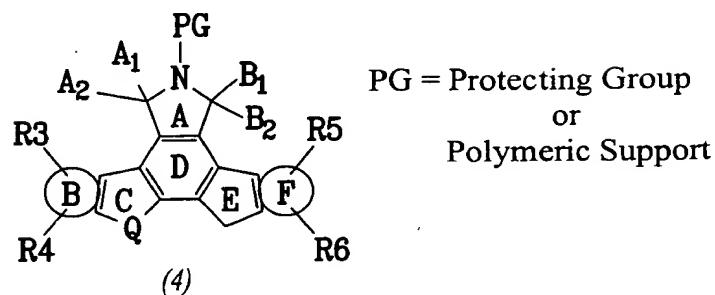
FIG. 7





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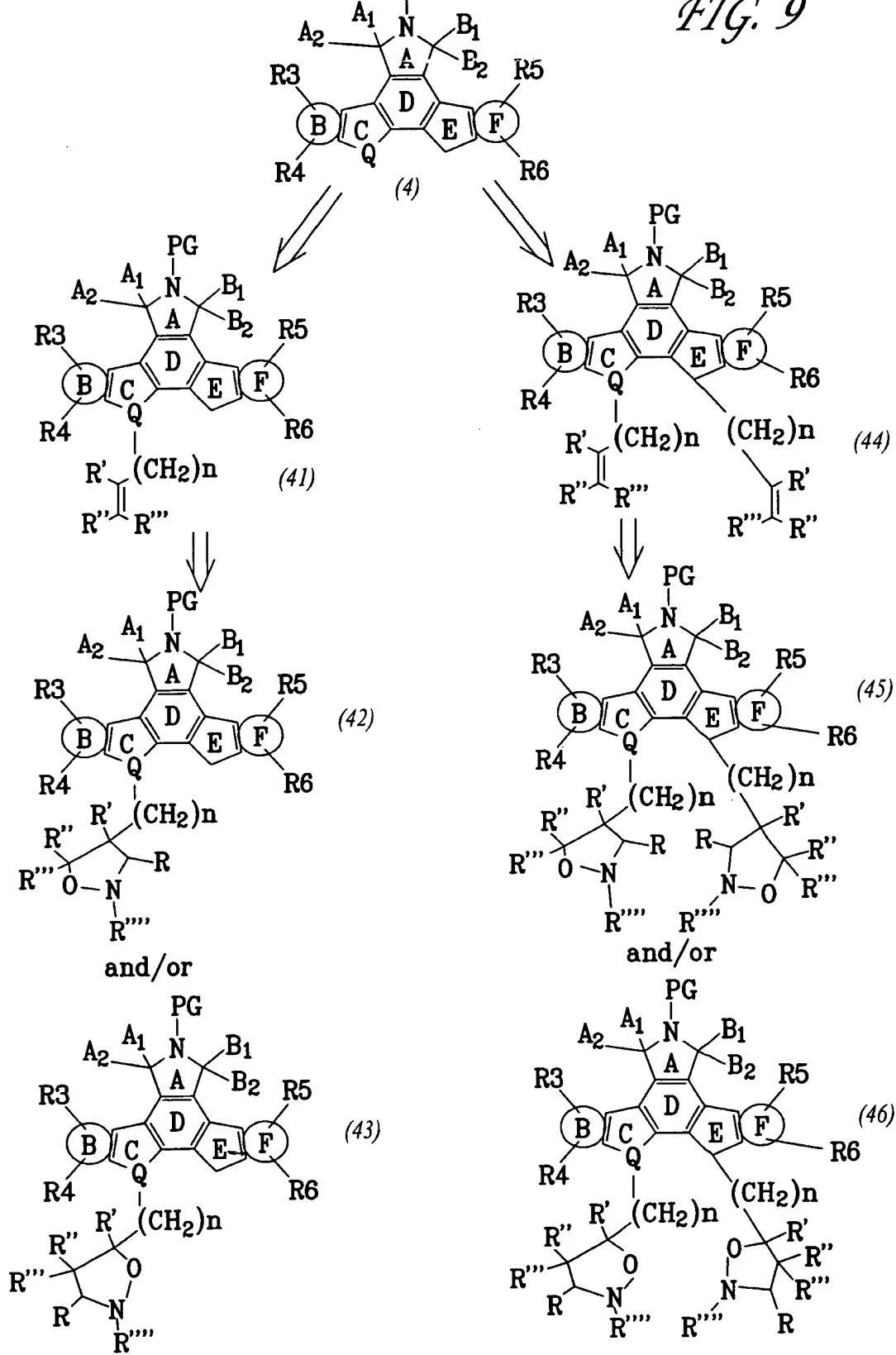
FIG. 8





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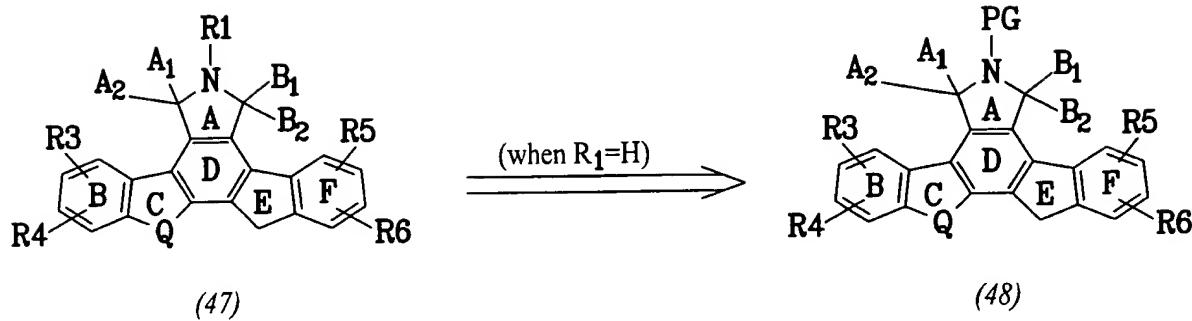
FIG. 9





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FIG. 10



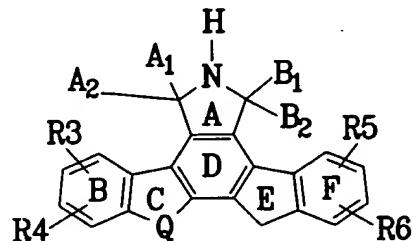
PG = Protecting Group
or
Polymeric Support



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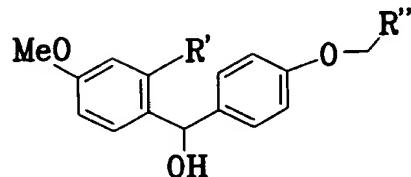
FIG. 11

Preparation of Soluble and Resin-bound N-lactam protected Fused Pyrrolocarbazoles (FP)



(47)

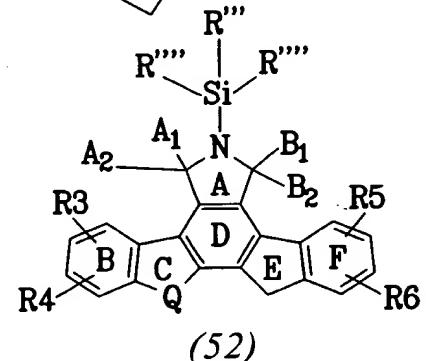
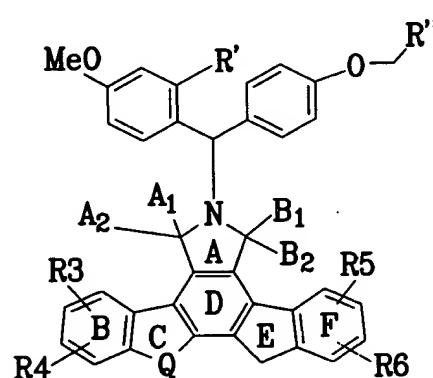
TsOH, Toluene, NMP, 140°C



(51a) $R' = H, R'' = H$

(51b) $R' = OMe, R'' = \text{Polymer}$

$(R''')_2R'''Si-X$
 Base
 THF, DMF or NMP



(52)

$R''' = Me, R'' = tBu \text{ (TBS)}$
 $R''' = Ph, R'' = tBu \text{ (TBS)}$

(49) $R' = H, R'' = H \gg \text{soluble protected FP}$
 (N-protecting group abbreviated as DMB)

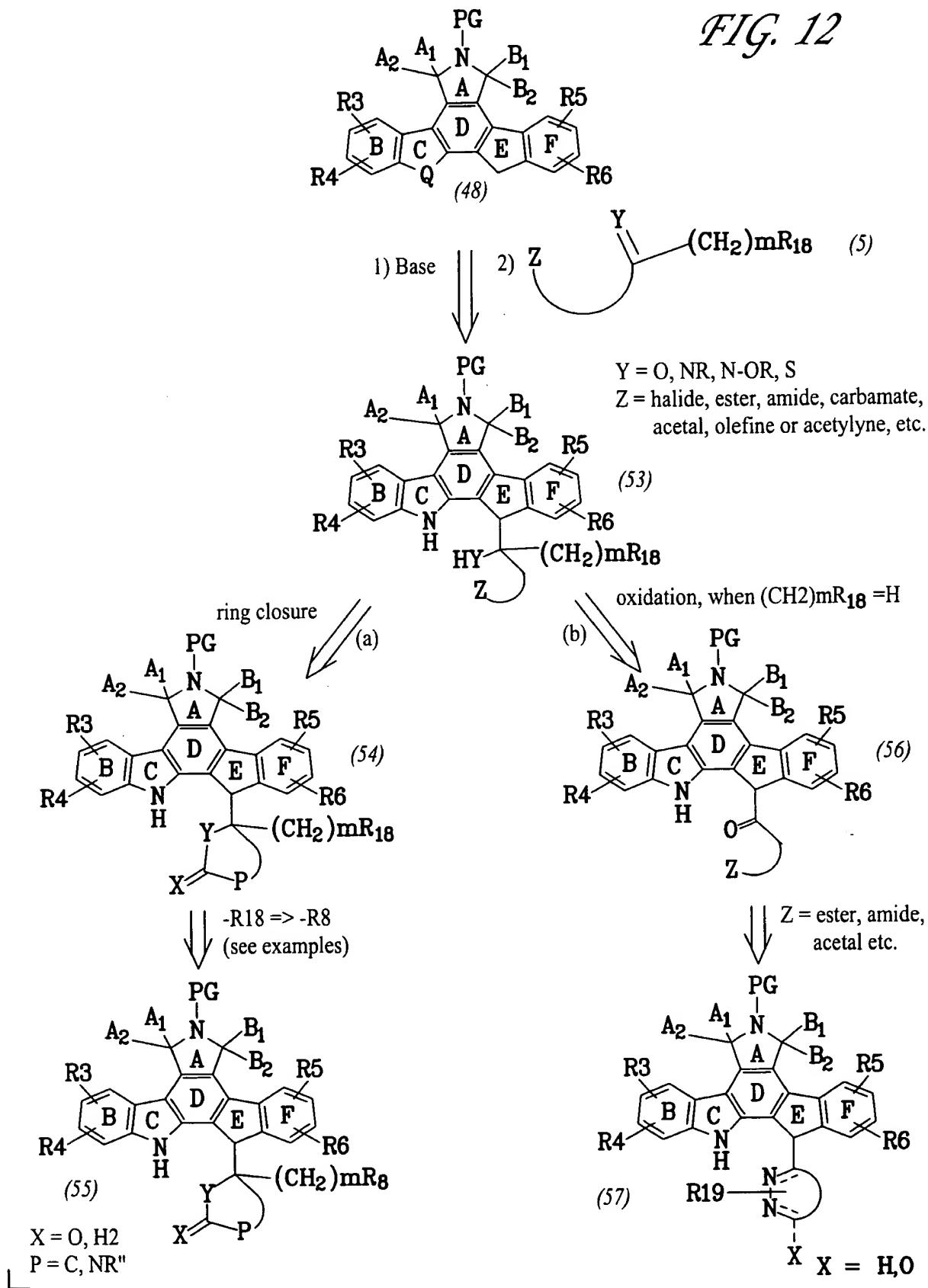
(50) $R' = OMe, R'' = \text{Polymer} \gg \text{solid-bound PG}$
 (the resin reagent referred to as Rink-acid resin)
 This is referred to in the text as "Resin"

(e.g. Polymer = copolystyrene-1%divinylbenzene)



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FIG. 12

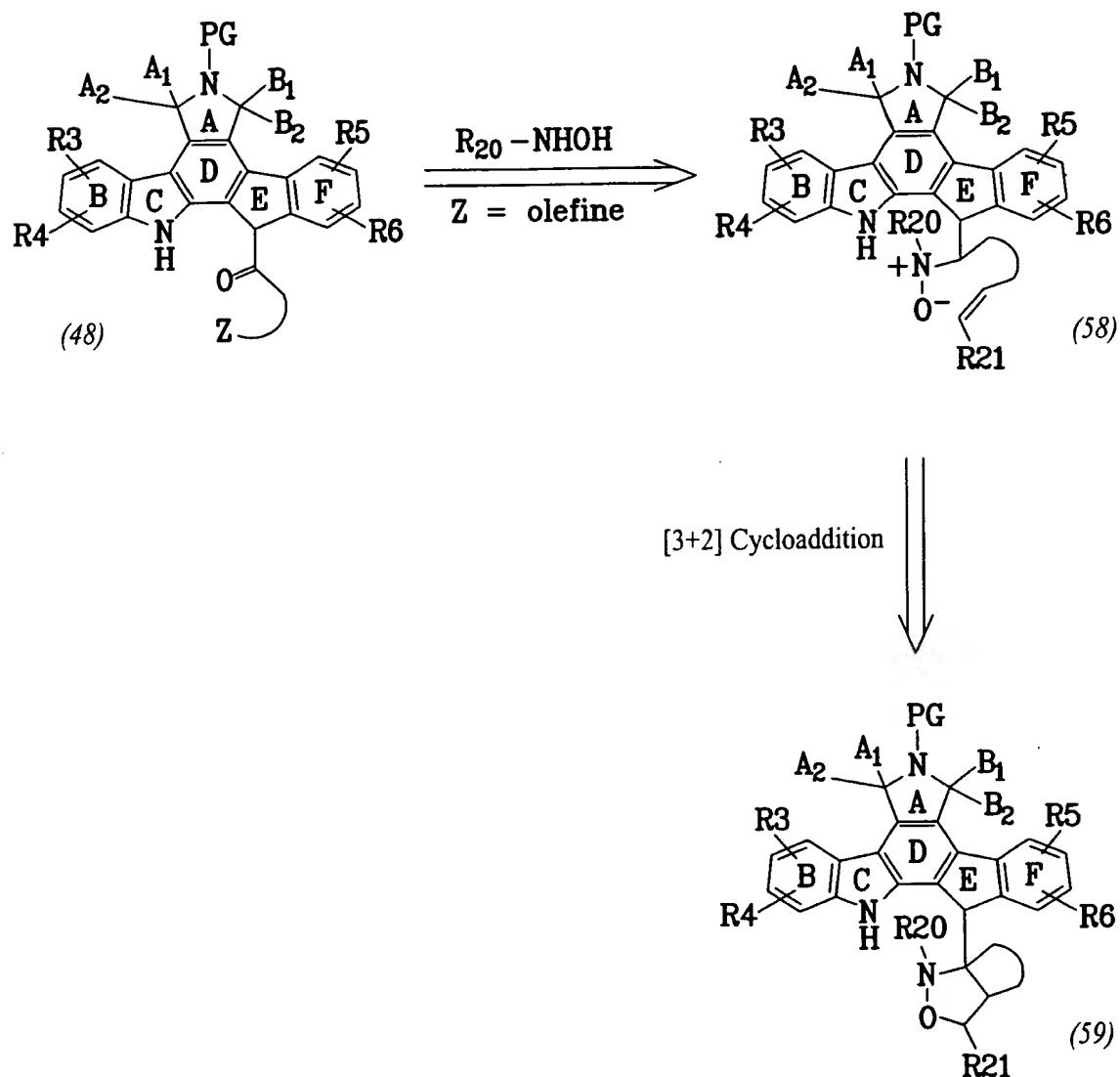




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FIG. 13

Preparation of Cyclic Substituents via Intra-molecular Dipolar Cycloaddition

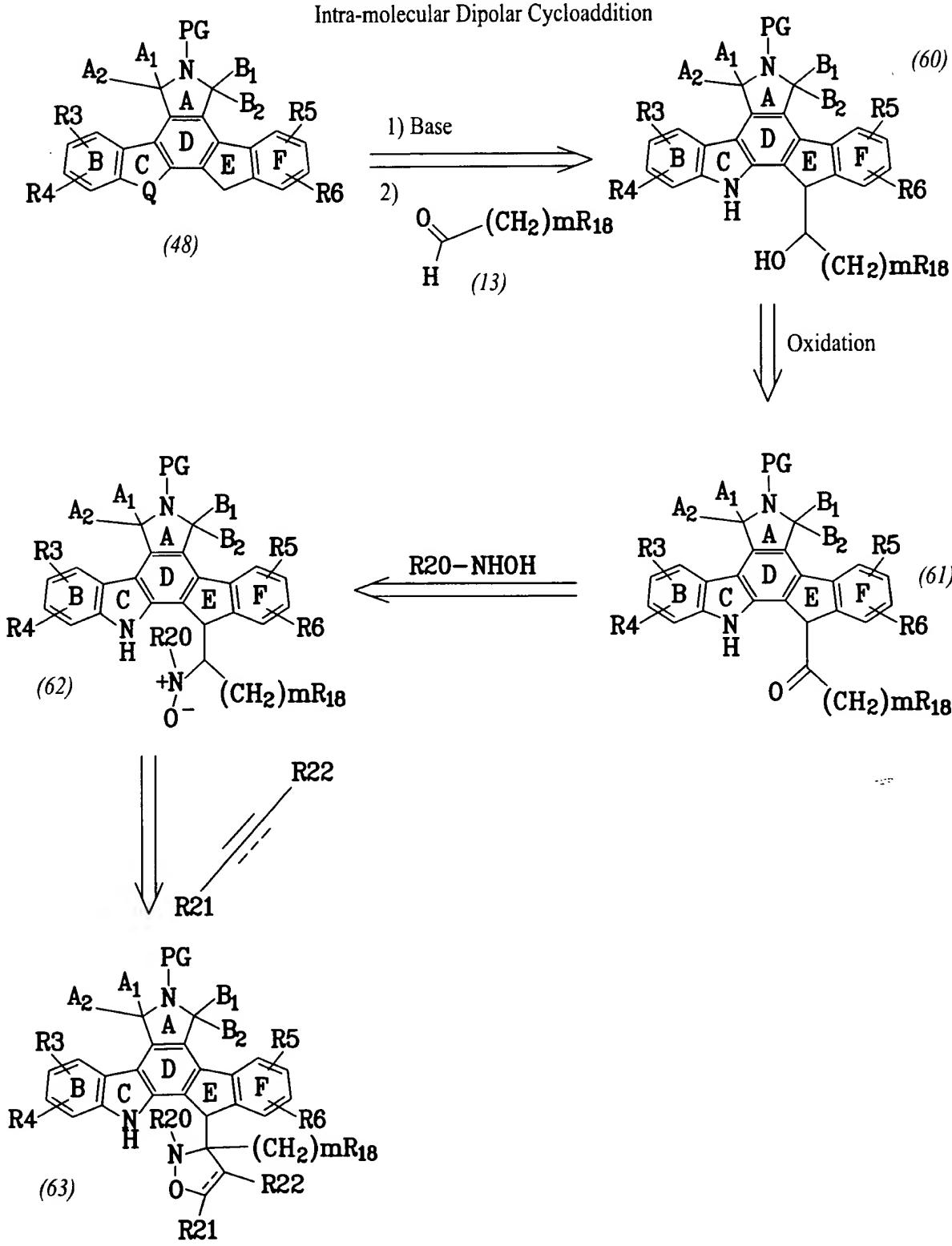




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 FIG. 14

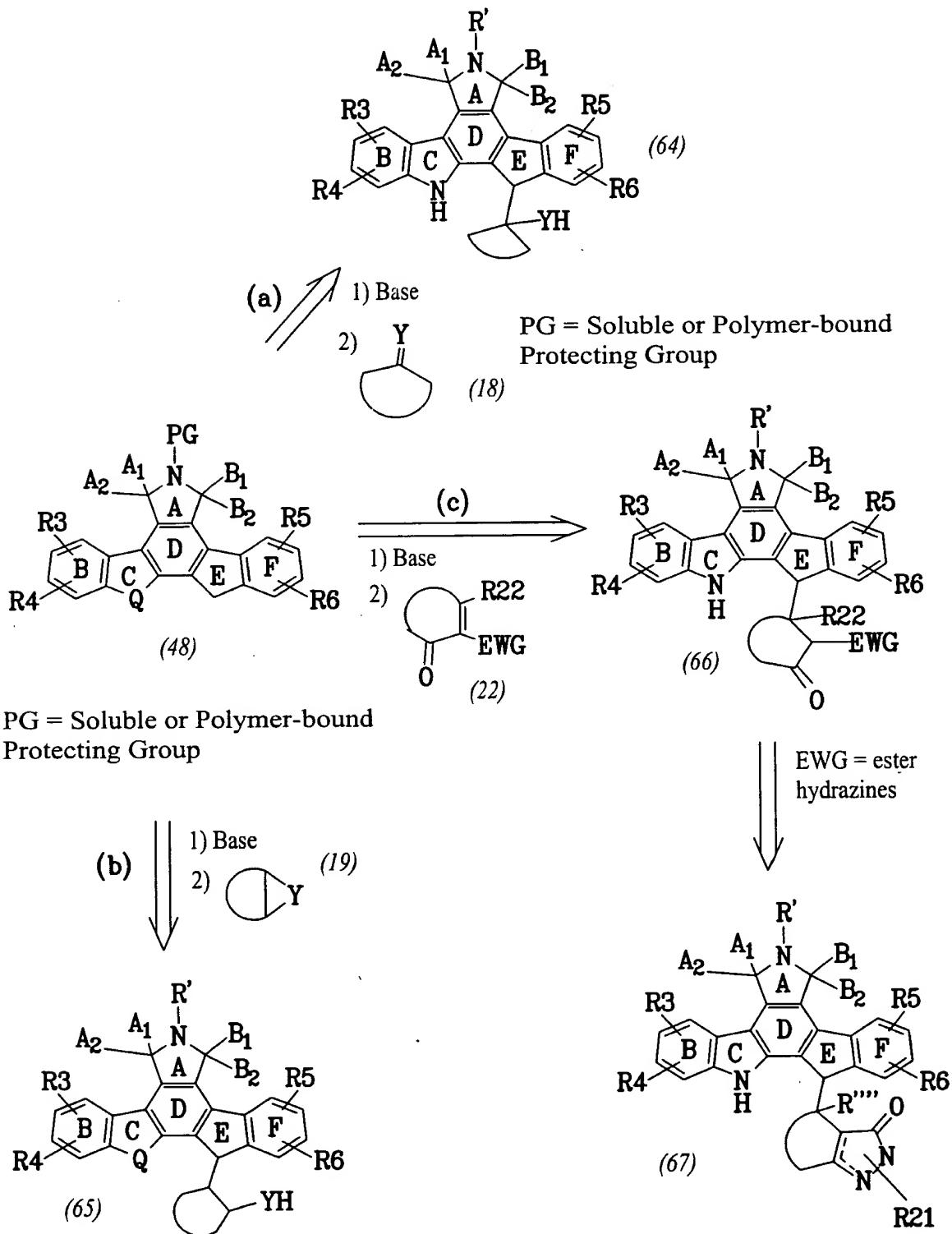
Preparation of Cyclic Substituents via
 Intra-molecular Dipolar Cycloaddition



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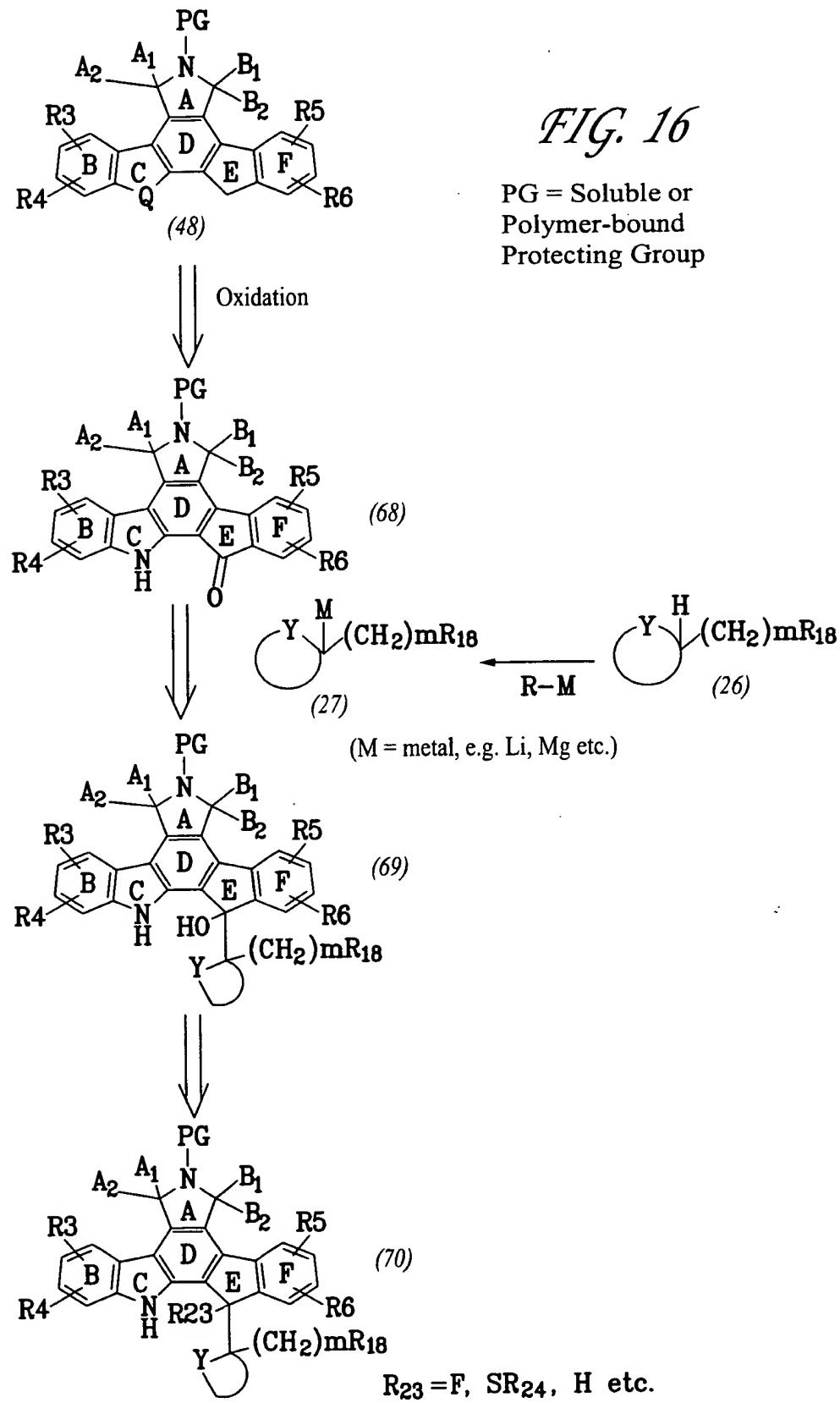
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FIG. 15





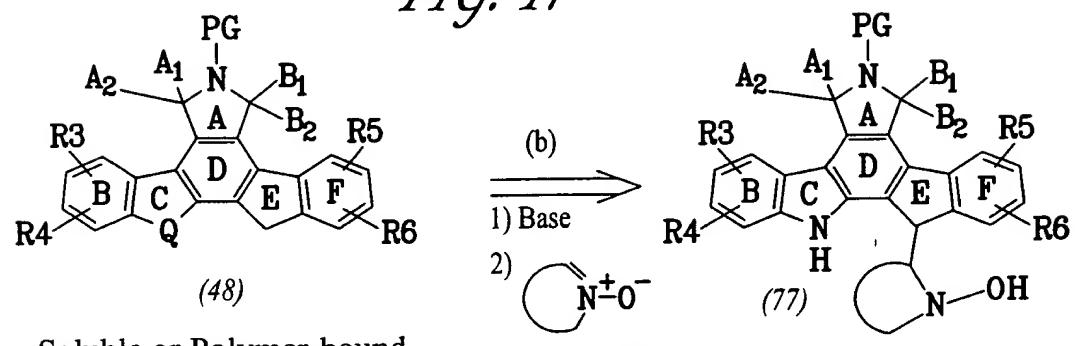
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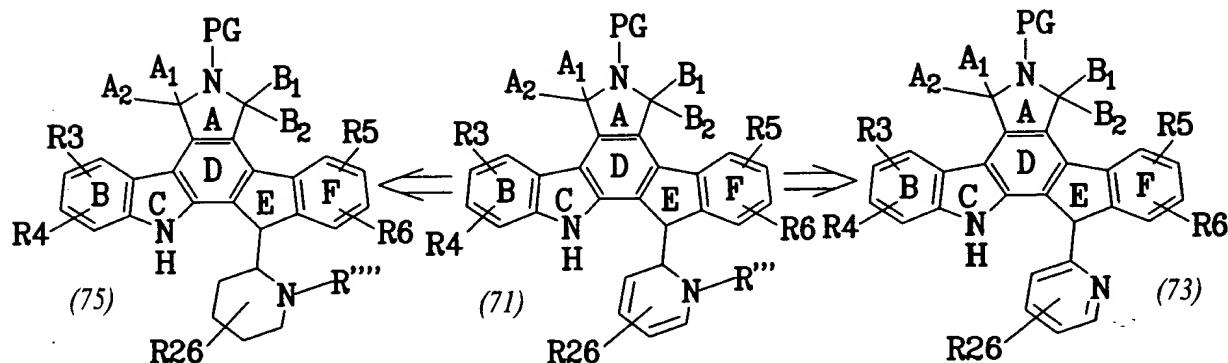
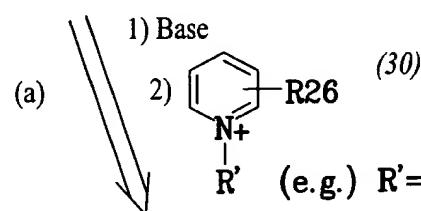


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FIG. 17

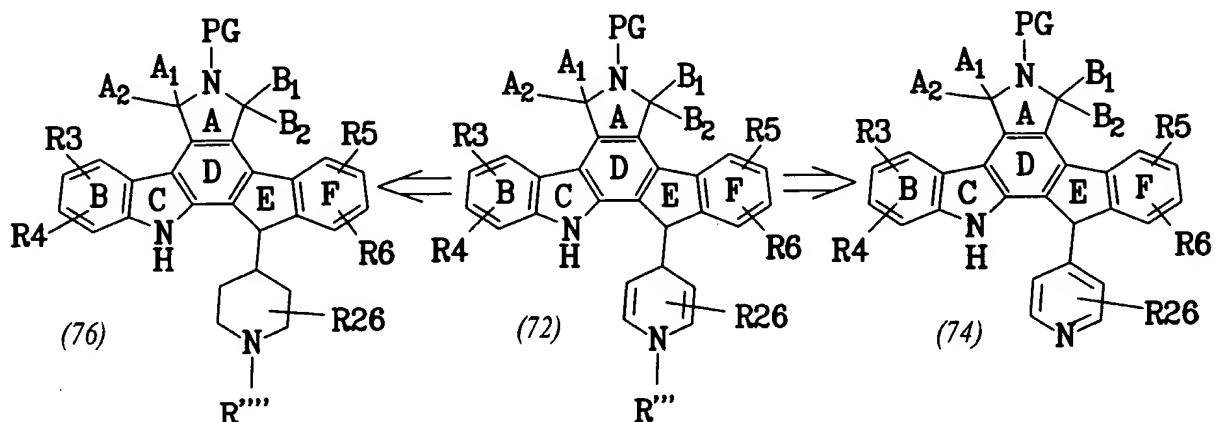


PG = Soluble or Polymer-bound Protecting Group



and/or R''' = H, COR''

and/or R'''= OH, COR'

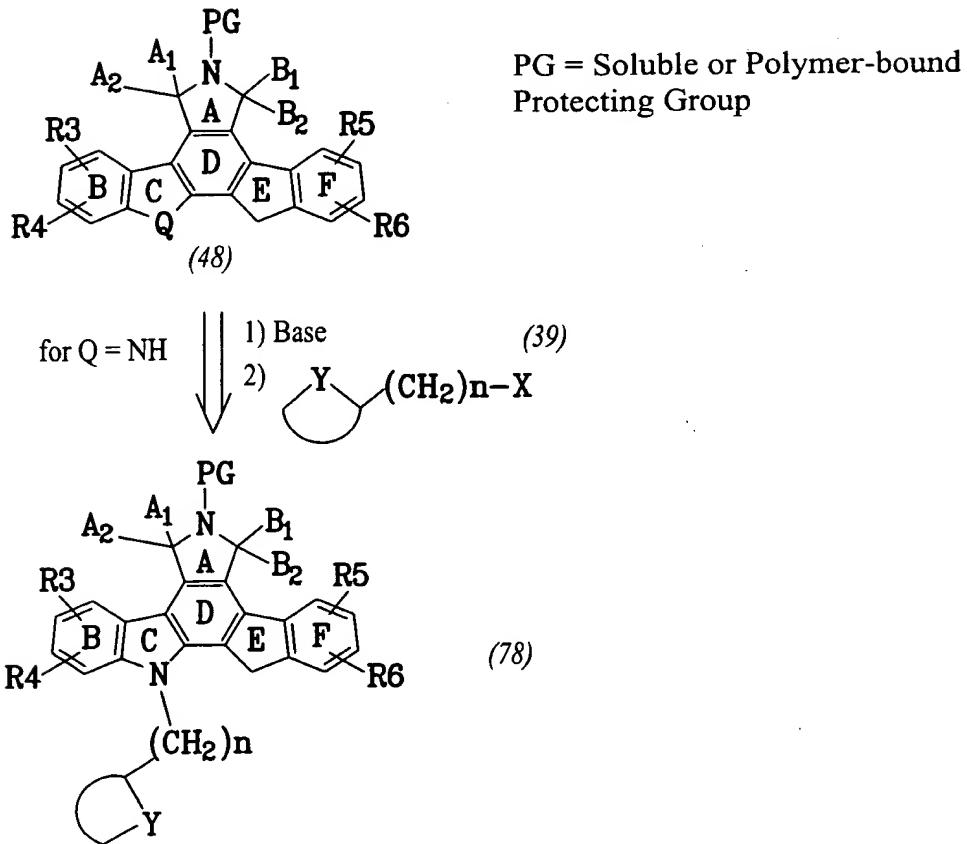




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FIG. 18



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